

REMARKS

I. General Remarks

Claims 1-6 have been amended herein. Claims 72 and 73 have been added as new claims. Claims 5 and 50 have been cancelled herein, and claims 11-30 and 57-61 are shown as withdrawn. Applicants have considered all points made by the Examiner in the Office Action and has responded to same in order to ensure compliance with the applicable rules.

II. Remarks Regarding the 35 U.S.C. § 102(b) Rejections

A. McPherson fails to teach each and every element of Applicant's recited claims

Claims 2 and 71 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 3,265,335 issued to McPherson (hereinafter "McPherson"). Applicant respectfully traverses the rejection on the basis of the amended independent claims 2 and 71.

McPherson does not teach each and every element of Applicant's amended independent claim 2 and 71. In particular, McPherson fails to teach a "hollow selective interrupter" as recited in claims 2 and 71. The portion of McPherson device which selects flow between tubes 97, 101, 107, and 111 is not hollow. Therefore, McPherson cannot anticipate Applicant's claims 2 and 71. Accordingly, Applicant respectfully requests withdrawal of this §102(b) rejection as to claims 2 and 71.

B. Simmons fails to teach each and every element of Applicant's recited claims

Claims 3-10, 31, 37-56, and 71 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. Re. 35,866 issued to Simmons (hereinafter "Simmons"). Claims 5 and 50 have been cancelled and are therefore no longer relevant to this rejection. Applicant respectfully traverses this rejection on the basis of the remaining amended claims.

Simmons does not teach each and every element of Applicant's amended independent claim 2 and 71. In particular, Simmons fails to teach structure that would allow a "hollow selective interrupter" to "substantially minimize a change in a back pressure from a flow source as the flow relationship gradually transitions from the first flow path to the second flow path" as recited in amended independent claim 2 (from which claims 3-10, 31, and 37-56 depend). Additionally, Simmons fails to teach a structure that would allow the "hollow selective interrupter" to "dampen and substantially minimize a change in a back pressure from a flow source as the flow relationship

gradually transitions from the first flow path to the second flow path” as recited in amended independent claim 71.

Simmons is directed to a valve for effecting movement and interaction of water streams to produce fountain displays. Thus, Simmons is concerned with creating aesthetically pleasing and entertaining spectacles of fountain streams of various shapes and sizes that move in periodic and synchronized fashion to produce moving images which may include the use of light beams of different colors being shined on the streams with optional accompanying music. Simmons is therefore primarily concerned with the effects of the streams outputted from the valve and not the effects on the backpressure on the supply source of water.

The elements of Applicant’s claims, on the other hand, require structure in the hollow selective interrupter so as to substantially minimize a change in back pressure from a flow source. Minimizing the change in back pressure from a flow source is desirable in many applications. One example of such an application where a smooth and gradual transition between multiple flow paths is desirable is the transitioning between a pneumatic air flow from an aircraft gyroscope instrument to a dummy load and vice-versa. The pneumatic air flow drivers in many aircraft are coupled to an aircraft engine, and these air fans are designed in such a way that if the back pressure suddenly increases on the fan (i.e. such as in the case of a fouled or blocked fan discharge line), the pneumatic air flow driver will disintegrate. The reason for this design is to protect the engine from interference from an air fan that is malfunctioning on account of a blocked output air line, the idea being that it is better that the fan fail and disintegrate rather than the fan interfering with the aircraft engine. Thus, in this application, it would be desirable to be able to change the flow source from a gyroscope instrument to a dummy load and vice-versa in a smooth and gradual fashion that minimizes changes in the back pressure to the air source.

Other applications, in which minimizing turbulence back pressure changes on a flow source would be desirable, include military submarines. In military submarines, for example, quiet operation of the submarine is highly desirable to avoid sonar detection. Any valve that can gradually transition flow paths while at the same time minimizing turbulence back pressure changes is desirable to reduce noise and thereby avoid sonar detection of the submarine from enemies.

Unlike the elements of Applicant’s claims, Simmons does not teach or suggest a structure that would allow a “hollow selective interrupter” to “substantially minimize a change in a back

pressure from a flow source as the flow relationship gradually transitions from the first flow path to the second flow path” as recited in amended independent claim 2, nor does Simmons teach a structure that would allow the “hollow selective interrupter” to “dampen and substantially minimize a change in a back pressure from a flow source as the flow relationship gradually transitions from the first flow path to the second flow path” as recited in amended independent claim 71. Accordingly, Applicant respectfully requests withdrawal of this §103(a) rejection as to claims 3-10, 31, and 37-56, which depend from amended independent claim 2 and amended independent claim 71.

III. Remarks Regarding the 35 U.S.C. 103(a) Rejections

Claims 32-36 and 62-70 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 2,210,916 issued to Kenyon *et al.* (hereinafter “Kenyon”) and in view of U.S. Pat. No. 5,931,196 issued to Bernardi *et al.* (hereinafter “Bernardi”) Applicants respectfully traverse on the basis of the amended claims.

A *prima facie* case of obviousness requires a showing that all claim limitations be taught or suggested by the art. *See* MANUAL OF PATENT EXAMINING PROCEDURE § 2143.03. Applicants respectfully submit the combination of Kenyon and Bernardi fail to form a proper basis for a *prima facie* case of obviousness, because they fail to teach all of the limitations of the claimed invention and thus they fail to yield an invention in the scope of Applicant’s claims. In particular, Kenyon and Bernardi both fail to teach a “hollow selective interrupter” to “substantially minimize a change in a back pressure from a flow source as the flow relationship gradually transitions from the first flow path to the second flow path” as recited in amended independent claim 2 (from which claims 32-36 depend). *See* Section II.B for a discussion of the advantages of this feature. Additionally, Kenyon and Bernardi both fail to teach the limitation “wherein a gradual rotation of the selective interrupter disengages, without disconnecting, a load from a single pneumatic flow source wherein the disengagement of the single pneumatic flow source is accomplished without substantially changing the back pressure on the single pneumatic flow source” as recited in amended independent claim 62.

As admitted by the Examiner, Kenyon fails to teach a hollow selective interrupter. *See* Office Action at 4. Bernardi, on the other hand, is directed to bypass valves for liquids and water softeners. The inlet and outlet ports 78 and 80 of Bernardi result in an abrupt discontinuity of flow and back pressure change when spool 16 is rotated in bore 14 of valve body 12. Consequently, the

bypass valve of Bernardi would be unsuitable for combination with the gyroscope of Kenyon so as to accomplish the desired limitation of Applicant's claims as follows:

- a "hollow selective interrupter" to "substantially minimize a change in a back pressure from a flow source as the flow relationship gradually transitions from the first flow path to the second flow path" as recited in amended independent claim 2 (from which claims 32-36 depend)
- "wherein a gradual rotation of the selective interrupter disengages, without disconnecting, a load from a single pneumatic flow source wherein the disengagement of the single pneumatic flow source is accomplished without substantially changing the back pressure on the single pneumatic flow source" as recited in amended independent claim 62 (and correspondingly, in dependent claims, 63-70)

Notwithstanding the above, no motivation exists in the cited prior art references themselves for combining Kenyon and Bernardi to arrive at Applicant's specific combination of recited claim elements. Additionally, the Examiner's proposed combination of Kenyon and Bernardi would change the fundamental principle of operation of the prior art. As explained in M.P.E.P. § 2143.01, "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." (citing *In re Ratti*, 270 F.2d 810 , 123 USPQ 349 (CCPA 1959)). In particular, the Examiner proposes incorporating the carburetor of the bypass valve of Bernardi into the automatic pilot device of Kenyon. This proposed change would fundamentally change the principle of operation of the Kenyon automatic pilot device. Combining the bypass valve of Bernardi into the automatic pilot of Kenyon would defeat the feedback system of Kenyon thereby causing the automatic pilot device of Kenyon to fail to function to achieve the desired result of providing corrective feedback to an aircraft to provide stabilized flight. Thus, incorporating the bypass valve of Bernardi into the automatic pilot device of Kenyon would not only change the fundamental principle of operation of the Kenyon automatic pilot device, but it would also render the Kenyon fuel injection system inoperable.

To the extent that the Examiner is relying on common or personal knowledge or taking official notice without documentary evidence to supply the missing elements or motivation combine or modify to the cited references, including unsubstantiated statements of what would be obvious to a person having ordinary skill in the art such as the statement in the Office Action at 5 (e.g. "It would have been obvious to one having ordinary skill in the art at the time the invention was made to

substitute for the valve (Figure 2, lines 19+) as taught by Bernardi et al (Figure 1) in order to provide more effective control of the aircraft pressure actuating fluid (motivation)”), Applicants respectfully traverse under M.P.E.P. § 2144.03(C) by requesting either (1) documentary evidence establishing the missing motivation to combine/modify the cited references, or (2) an affidavit setting forth the specific factual statements and explanation to support the Examiner’s finding in accordance with 37 C.F.R. § 1.104(d)(2).

Thus, Applicants respectfully submit the combination of Kenyon and Bernardi fail to form a proper basis for a prima facie case of obviousness, because they fail to teach all of the limitations of the claimed invention. Accordingly, for at least these reasons, Applicant respectfully requests withdrawal of this §103(a) rejection as to claims 3-10, 31, and 37-56, which depend from amended independent claim 2 and as to amended independent claim 62, and correspondingly as to dependent claims thereto 63-70.

IV. No Waiver

All of Applicants’ arguments and amendments are without prejudice or disclaimer. Additionally, Applicants have merely discussed example distinctions from the prior art references. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by Examiner, Applicants do not acquiesce to Examiner’s additional statements, including statements referring to any motivation to combine references. The example distinctions discussed by Applicants are sufficient to overcome the anticipation and obviousness rejections.

CONCLUSION

A check in the amount of \$225 is included for the two-month extension fee. Authorization is hereby given to charge Deposit Account No. 10-0096 for any deficiency of fees.

The practitioner, named below, is authorized to file correspondence in the above-identified application pursuant to 37 C.F.R. § 1.34(a).

The Applicant invites the Examiner to contact the undersigned for a teleconference to resolve any outstanding issues, as this Response is believed to put the case in condition for allowance.

At this time and in view of Applicants' amendments and arguments set forth above, Applicants respectfully submit that all pending claims are allowable and respectfully requests a notice of allowance.

Respectfully submitted,
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CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited on the date shown below with the United States Postal Service, with sufficient postage as First Class Mail (37 CFR 1.8(a)), in an envelope addressed to Mail Stop AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450.

Date: February 16, 2007


Renee Treider